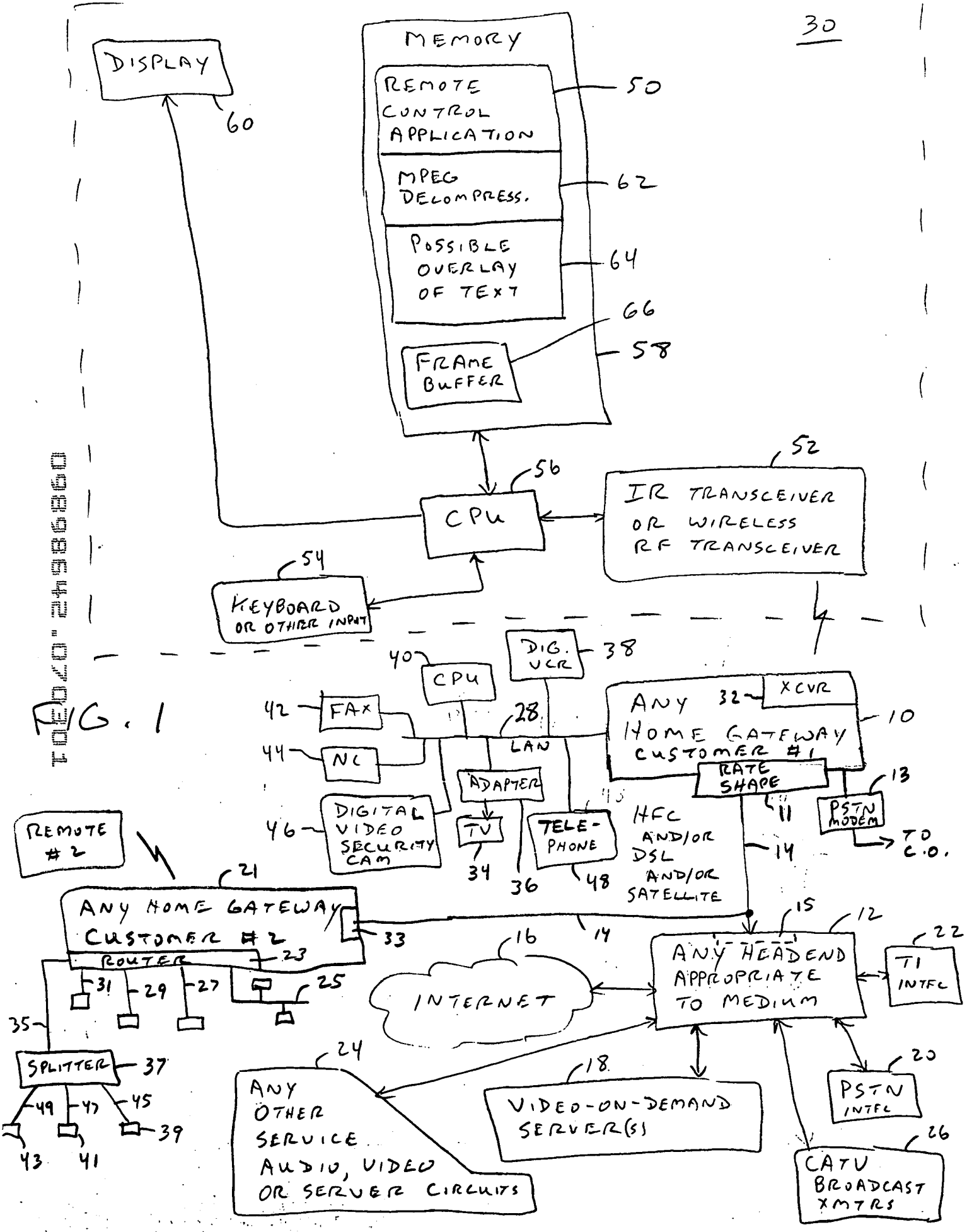

FIG. 1

Tech-Sym-24986

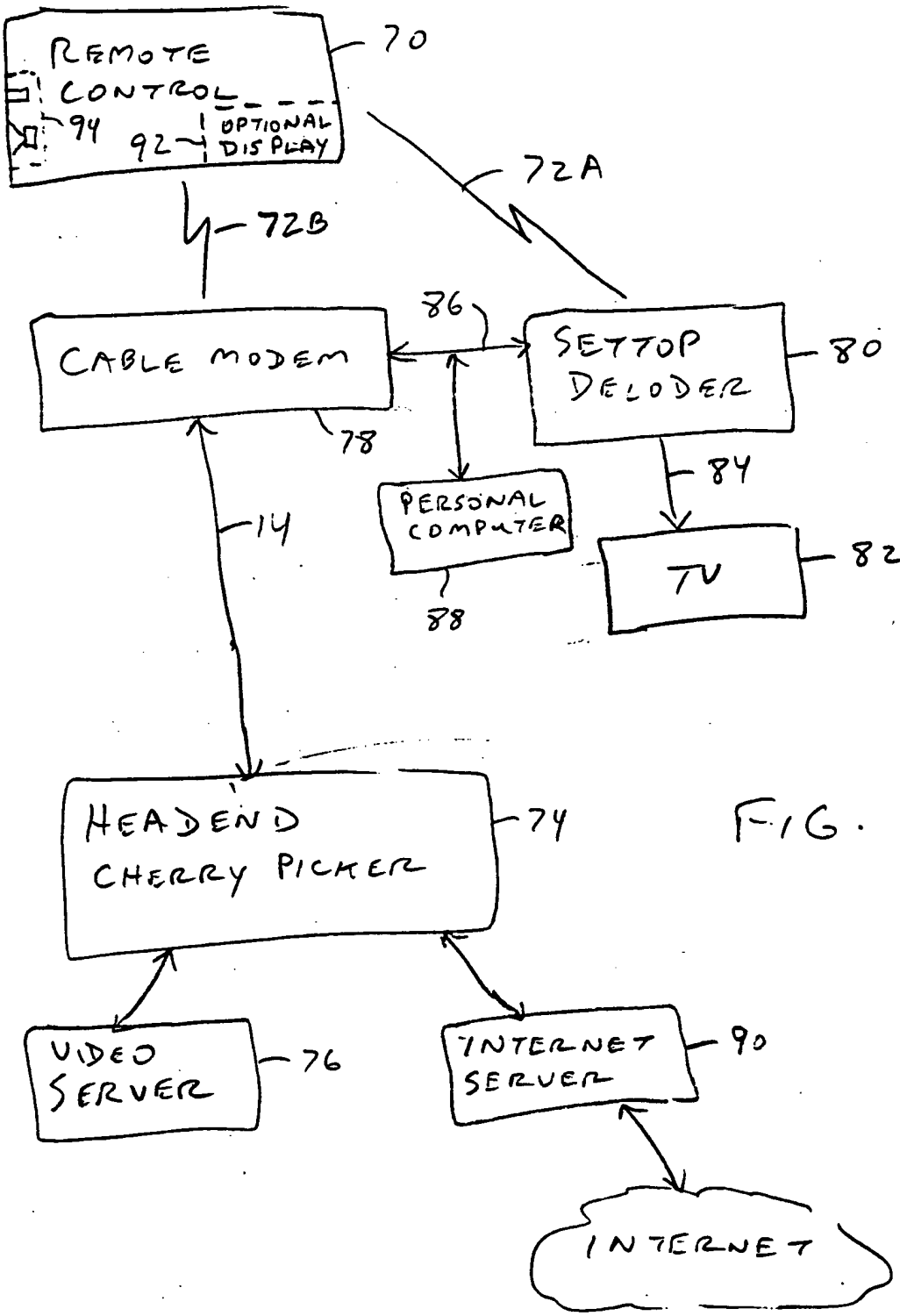

FIG. 2

Exhibit 2004

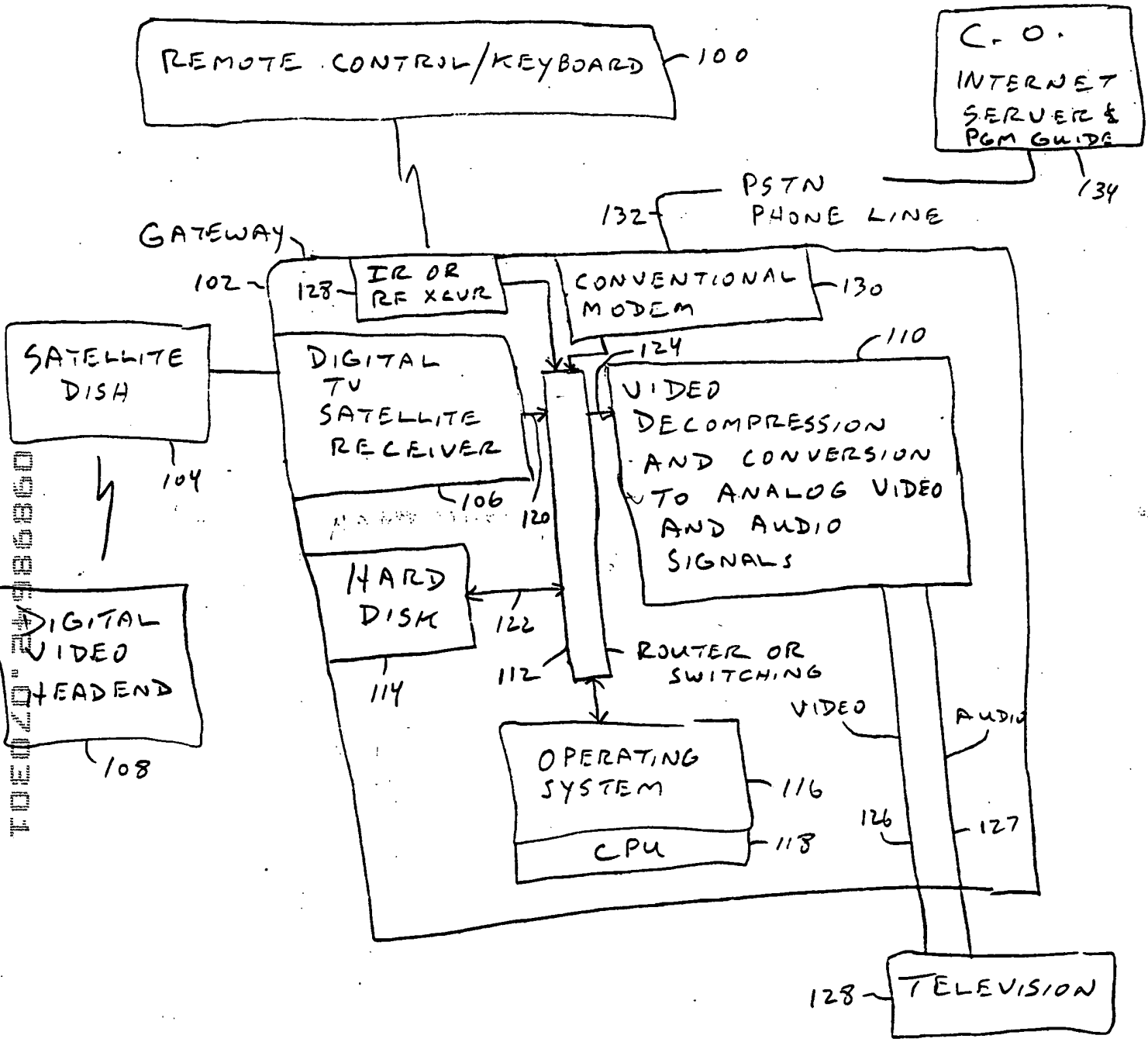
REMOTE CONTROL/KEYBOARD
100
C. O.
INTERNET
SERVER &
PGM GUIDE
134
PSTN
PHONE LINE
132
GATEWAY
102
128
IR OR
RF XCVR
CONVENTIONAL
MODEM
130
SATELLITE
DISH
104
DIGITAL
TV
SATELLITE
RECEIVER
106
124
110
VIDEO
DECOMPRESSION
AND CONVERSION
TO ANALOG VIDEO
AND AUDIO
SIGNALS
120
HARD
DISK
122
114
112
ROUTER OR
SWITCHING
DIGITAL
VIDEO
HEADEND
108
VIDEO
AUDIO
OPERATING
SYSTEM
116
CPU
118
126
127
128
TELEVISION

FIG. 3

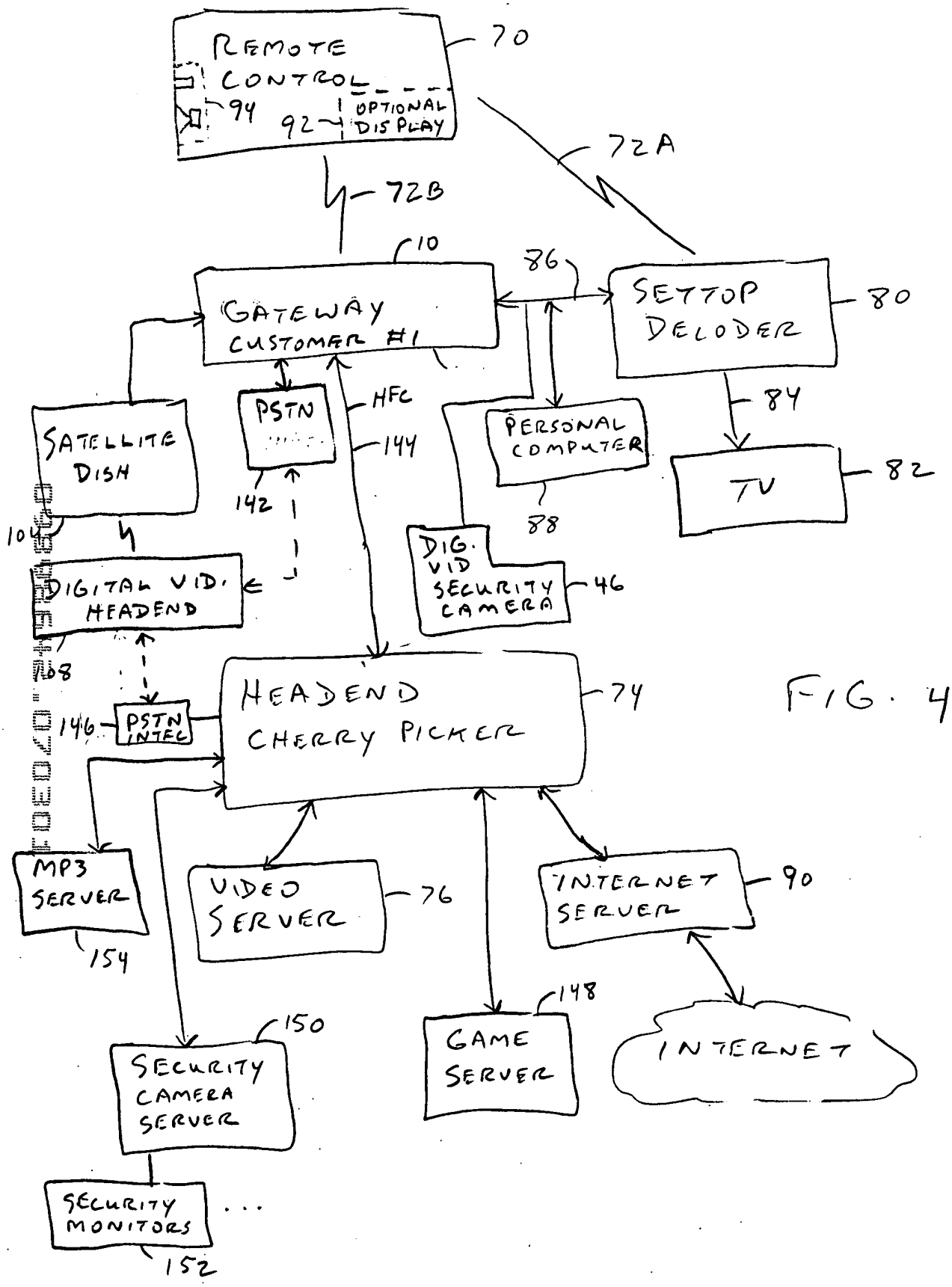
REMOTE CONTROL
70
94
92
OPTIONAL DISPLAY
72A
72B
10
86
GATEWAY CUSTOMER #1
SETTOP DECODER
80
SATELLITE DISH
PSTN
HFC
144
142
PERSONAL COMPUTER
88
84
TV
82
104
DIGITAL VID. HEADEND
DIG. VID SECURITY CAMERA
46
108
HEADEND CHERRY PICKER
74
146
PSTN INTEC
MP3 SERVER
154
VIDEO SERVER
76
INTERNET SERVER
90
148
GAME SERVER
INTERNET
150
SECURITY CAMERA SERVER
SECURITY MONITORS
152

FIG. 4

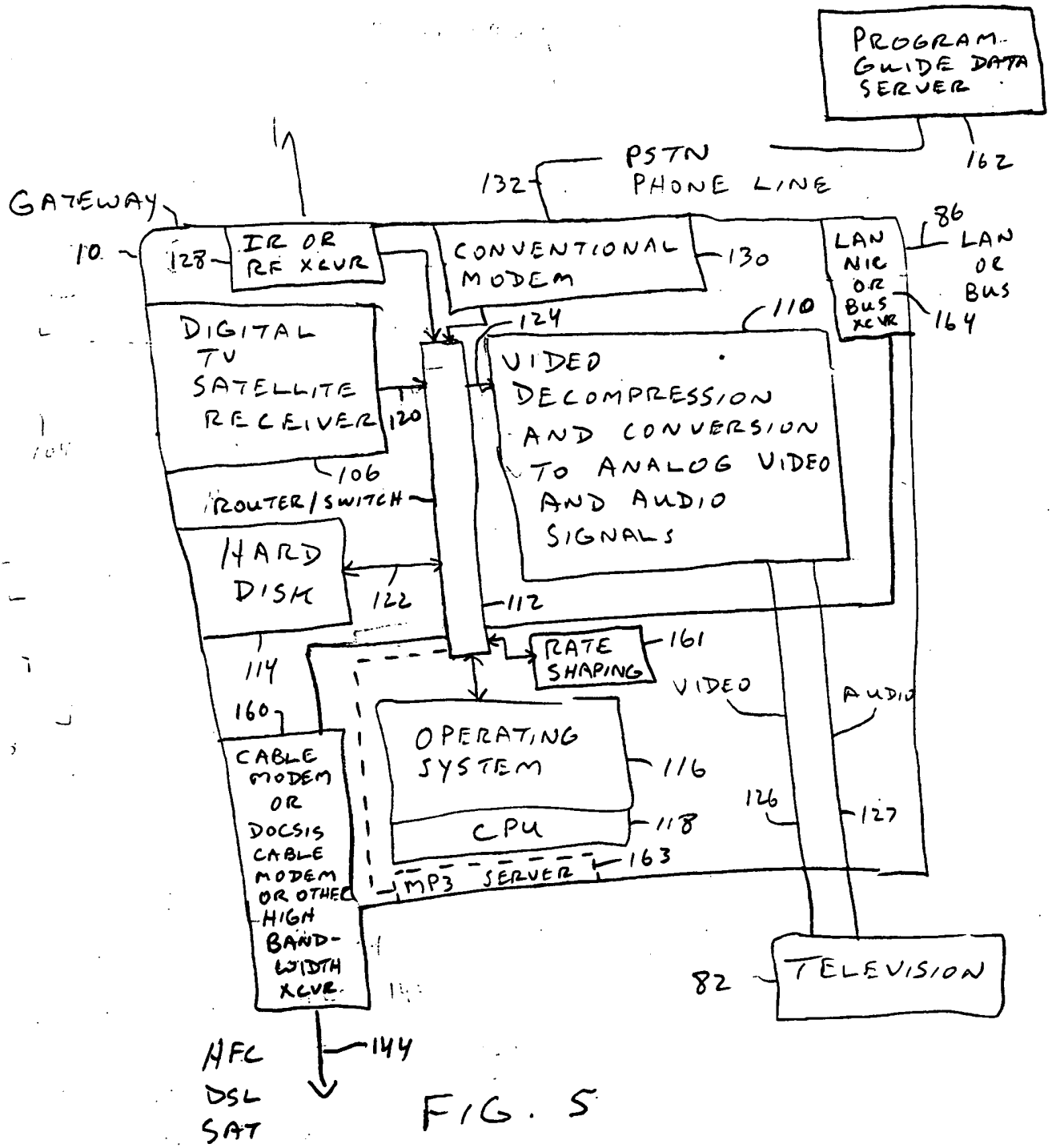
PROGRAM GUIDE DATA SERVER
162
PSTN PHONE LINE
132
GATEWAY
10
128
IR OR RF XCVR
CONVENTIONAL MODEM
130
LAN NIC OR BUS XCVR
86
LAN OR BUS
164
DIGITAL TV SATELLITE RECEIVER
120
124
110
VIDEO DECOMPRESSION AND CONVERSION TO ANALOG VIDEO AND AUDIO SIGNALS
106
ROUTER/SWITCH
HARD DISK
122
112
RATE SHAPING
161
114
160
VIDEO
AUDIO
OPERATING SYSTEM
116
CPU
118
126
127
MP3 SERVER
163
CABLE MODEM OR DOCSIS CABLE MODEM OR OTHER HIGH BAND-WIDTH XCVR
82
TELEVISION
HFC
DSL
SAT
144

FIG. 5

HEADEND ARCHITECTURE TO SEND DATA AND VOD AND/OR BROADCAST DATA TO CUSTOMERS VIA HFC

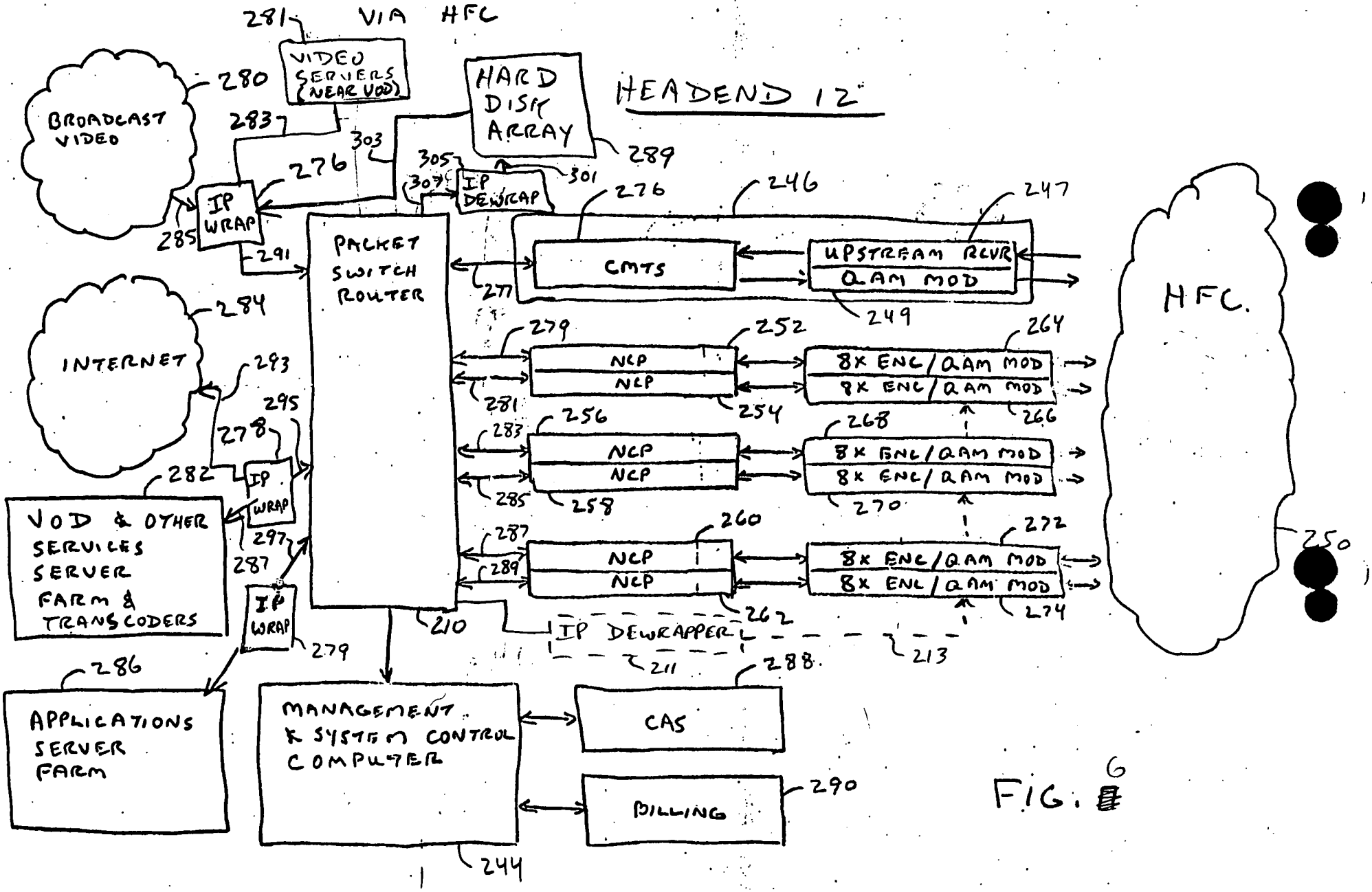

FIG. 6

TDE020 "2+1986860

EMBODIMENT FOR TRANSMISSION OF DATA AND VIDEO PROGRAM DATA FROM HEADEND TO CUSTOMERS

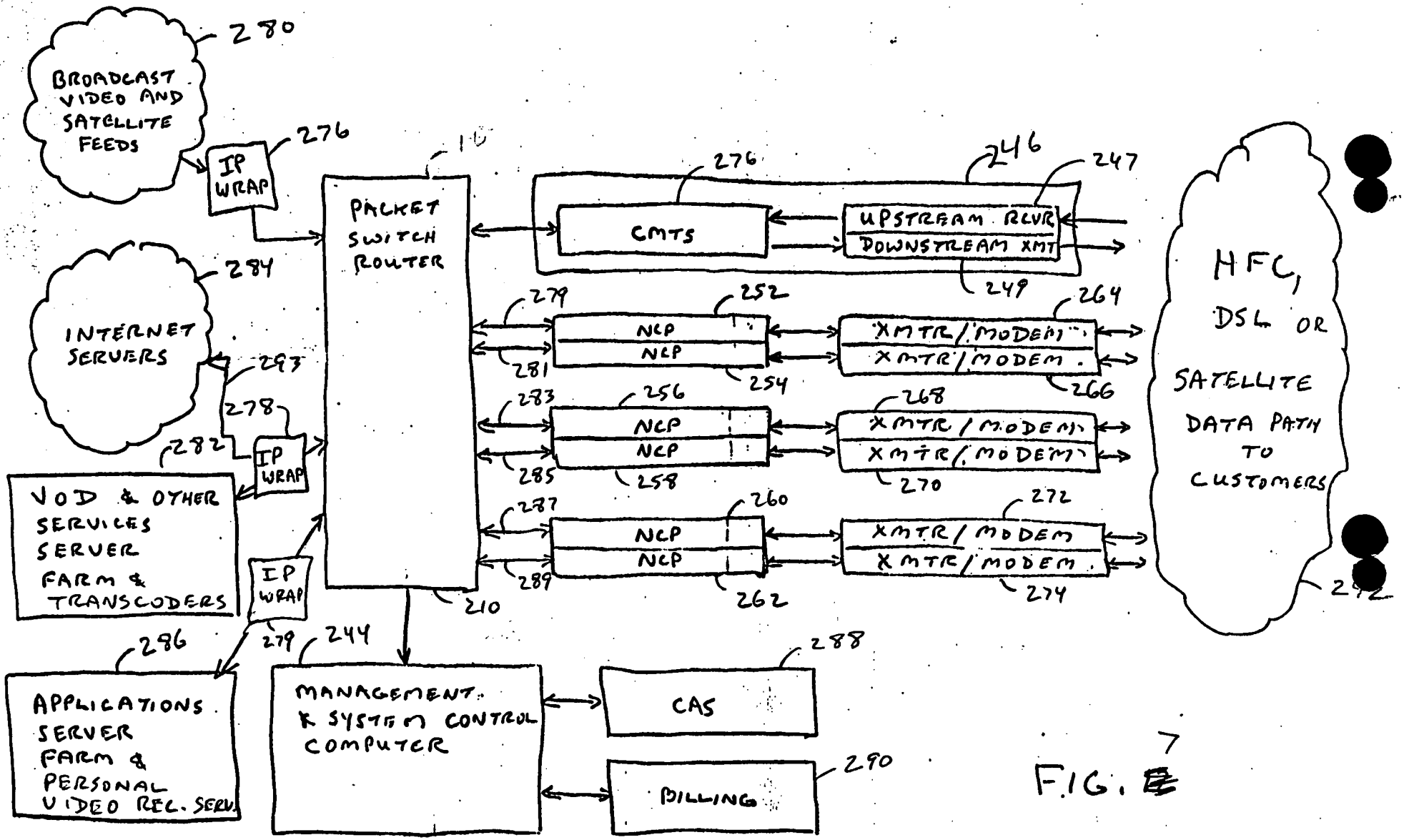

FIG. 7

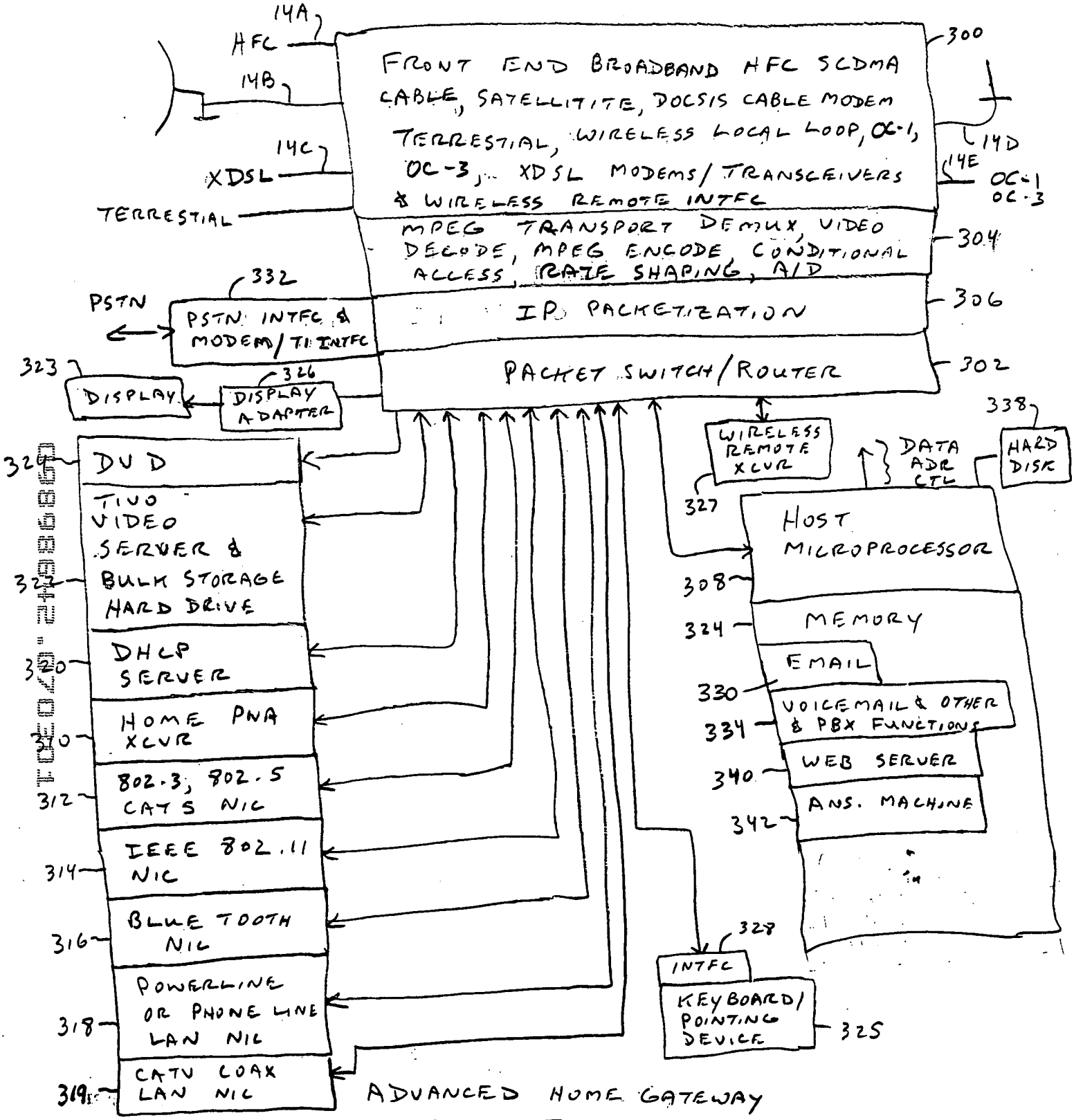
14A
HFC
14B
14C
XDSL
TERRESTIAL
FRONT END BROADBAND HFC SCDMA CABLE, SATELLITE, DOCSIS CABLE MODEM TERRESTIAL, WIRELESS LOCAL LOOP, OC-1, OC-3, XDSL MODEMS/TRANSCEIVERS & WIRELESS REMOTE INTFC
300
14D
14E
OC-1
OC-3
MPEG TRANSPORT DEMUX, VIDEO DECODE, MPEG ENCODE, CONDITIONAL ACCESS, RATE SHAPING, A/D
304
IP PACKETIZATION
306
PACKET SWITCH/ROUTER
302
PSTN
332
PSTN INTFC & MODEM/T1 INTFC
323
DISPLAY
326
DISPLAY ADAPTER
338
HARD DISK
DATA ADR CTL
WIRELESS REMOTE XCVR
327
HOST MICROPROCESSOR
308
MEMORY
324
EMAIL
330
VOICEMAIL & OTHER & PBX FUNCTIONS
334
WEB SERVER
340
ANS. MACHINE
342
328
INTFC
KEYBOARD/ POINTING DEVICE
325
DVD
TIVO VIDEO SERVER & BULK STORAGE HARD DRIVE
DHCP SERVER
HOME PNA XCVR
802.3, 802.5 CAT 5 NIC
IEEE 802.11 NIC
BLUE TOOTH NIC
POWERLINE OR PHONE LINE LAN NIC
CATV COAX LAN NIC
ADVANCED HOME GATEWAY

FIG. 8

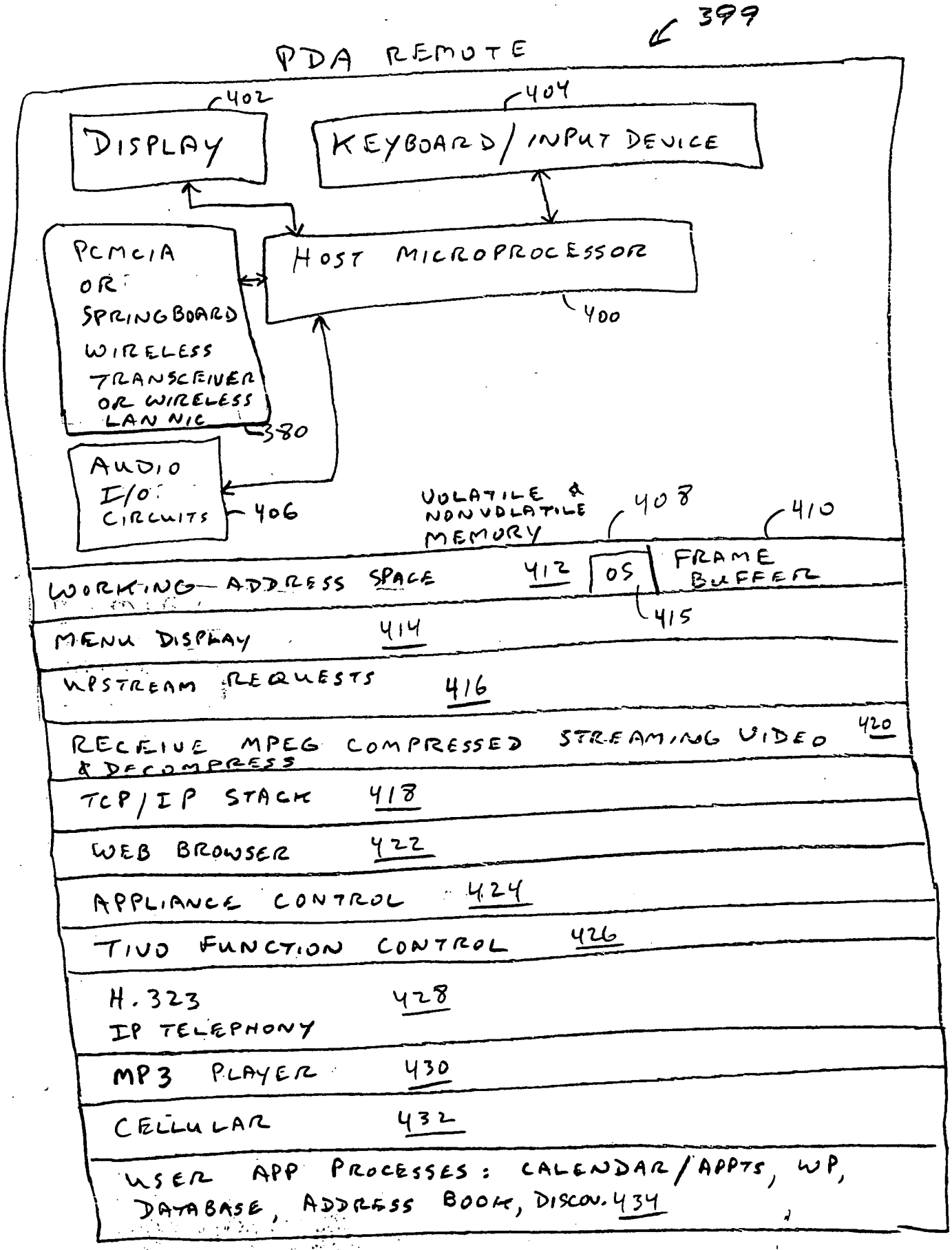
399
PDA REMOTE
402
DISPLAY
404
KEYBOARD / INPUT DEVICE
PCMCIA OR SPRINGBOARD WIRELESS TRANSCEIVER OR WIRELESS LAN NIC
380
HOST MICROPROCESSOR
400
AUDIO I/O CIRCUITS
406
VOLATILE & NONVOLATILE MEMORY
408
410
WORKING ADDRESS SPACE
412
OS
415
FRAME BUFFER
MENU DISPLAY
414
UPSTREAM REQUESTS
416
RECEIVE MPEG COMPRESSED STREAMING VIDEO & DECOMPRESS
420
TCP/IP STACK
418
WEB BROWSER
422
APPLIANCE CONTROL
424
TIVO FUNCTION CONTROL
426
H.323 IP TELEPHONY
428
MP3 PLAYER
430
CELLULAR
432
USER APP PROCESSES: CALENDAR/APPTS, WP, DATABASE, ADDRESS BOOK, DISCON.
434

FIG. 9